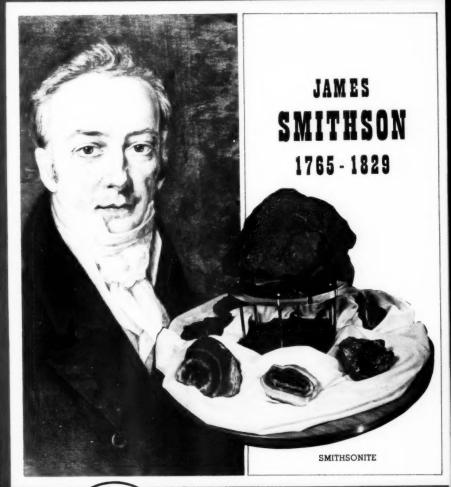
GEOTIMES

Professional News Magazine





September 1958

Volume III, No. 2
Published by the
American Geological Institut



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Palendar

Cooperation of Society Secretaries in supplying meeting notices for GEOTIMES calendar is requested.

Sept. 2-4, 1958—SVP: Annual Meeting with SSE, University of Michigan, Ann Arbor, Mich.

ept. 2-5, 1958—NINTH ALASKAN SCIENCE CONF., Univ. of Alaska, College, Alaska

Sept. 9-11, 1958—ASCE-AMS: Jointly sponsor-ing the Second National Conference on Applied Meteorology: Engineering, Ann Arbor, Mich. Write: D. J. Portman, 5500 East Engineering Bldg., Univ. of Mich., Ann Arbor, Mich.

ept. 15-20, 1958—4th INTERNATIONAL CONGRESS on Carboniferous Stratigraphy, Paleontology and Geology, Heerlen, Netherlands.

Sept. 17-19, 1958—AIME: Rocky Mountain Mins. Conf., Newhouse Hotel, Salt Lake City.

*Sept. 27-Oct. 5, 1958—GEOLOGICAL SOC. OF VIENNA, 50th anniversary; meetings and field trips. Write: the Society at the Geologi-cal Institute, Univ. of Vienna.

cal institute, July of Wienna. ct. 2-4, 1958—8th ANNUAL DRILLING & BLASTING SYMPOSIUM, sponsored jointly by Colo. School of Mines, Penn State University and the University of Minnesota, at the Univ. of Minn. Write: Center for Continuation Study, University of Minnesota, Minneapolis 14 Minn. 14, Minn.

et. 5-8, 1958—AIME: SOC. PETR. ENG., Ann. Fall Mtg., City Coliseum—Rice Hotel, Houston, Oct. 5-8, 1958 Texas.

Oct. 9-11, 1958—OPTICAL SOC. OF AMER., Ann. Mtg., Statler Hotel, Detroit, Michigan. Oct. 13-16, 1958—SEGp: 28th Ann. Meeting, Gunter Hotel & Municipal Auditorium, San Antonio, Texas.

et. 16-17, 1958—AIME: Southern California Petroleum Sect. Fall Meeting, Biltmore Hotel, Los Angeles.

Oct. 20-23, 1958—SEVENTH NATIONAL CLAY CONFERENCE, U.S. National Museum, Wash-ington, D. C. Field trip Oct. 20 to areas in NE Maryland and northern Delaware. *Oct. 20-23, 1958-

Oct. 22-25, 1958—AAPG, Southwest Regional Meeting, sponsored by SW Fed. of Geol. Soes, City Auditorium, Mineral Wells, Texas. Field trip of Brazos Valley in conjunction with 1st Ann. Mtg. Write: John A. Kay, 618 Wichita Nat'l. Bldg., Wichita Falls, Texas.

*Oct. 23-25, 1958-AIME: Mid-America Minerals Conference, Chase-Park Plaza Hotels, St. Louis, Field trips Oct. 24 to the River King Mine of Peabody Coal Co. and to Indian Creek Mine and mill of St. Joseph Lead Co.

GEOLOGICAL SOC'S., Ann. Mtg., Corpus Christi, Texas. Write: Theodore D. Cook, P.O. Box 1861, Corpus Christi, Texas.

Nov. 6-7, 1958—AAPG: PACIFIC SECT. Ann. Mtg., Ambassador Hotel, Los Angeles, Calif.

*Nov. 6-8, 1958—GSA: ANNUAL MEETING, St. Louis, Mo. Also SEcG, SVP, PS & AGT. Five field trips and guidebooks covering Missouri and Illinois.

Feb. 15-19, 1959—AIME: Annual Meeting, Hotels St. Francis, Sheraton-Palace, Drake, San Francisco, Calif.

Drake, San Francisco, Calif.

March 16-19, 1959—AAPG-SEPM: 44th Annual Meeting, Memorial Auditorium, Dallas, Texas.

May 30-June 6, 1959—5th WORLD PETROLEUM CONGRESS, Permanent Council, New York.

Write: C. E. Davis, Gen. Sec'y, 527 Madison Ave. New York 2.

Aug. 30-Sept. 12, 1959—INTERNATIONAL OCEANOGRAPHIC CONGRESS, AAAS, UNESCO & ICSU special committee on oceanic research cooperating; United Nations Bldg., N.Y. Write: Dr. Mary Sears, Woods Hole Oceanographic Institution, Woods Hole, Mass.

*Aug. 6-12, 1960—XIX INTERNATIONAL GEO-GRAPHICAL CONGRESS, Stockholm, Sweden. Symposia and excursions will be held in the five host countries before and after the Stockholm meeting.

Aug. 15-25, 1960—XXI INTERNATIONAL GEOLOGICAL CONGRESS, to be held at the Mineralogical Geological Museum of the Uni-versity of Copenhagen in Denmark. Field trips before and after the meetings.

1958 SCHEDULE OF FIELD TRIPS

For additional field trips held in conjunction with meetings, see those items marked with an as-terisk under meeting calendar.

ept. 5-6—FRIENDS OF THE PLEISTOCENE, Rocky Mtn. Sect., field trip in Jackson Hole area of NW Wyoming. Write: John Montagne, Dept. of Geog. & Geol., Montana State College, Sept. 5-6-

Sept. 10-13—INTERMOUNTAIN ASSOCIATION OF PETROLEUM GEOLOGISTS, 9th Ann. Field Trip, Paradox Basin of SE Utah. Moab to Monument Valley & Aneth areas. Write: P.O. Box 34, Salt Lake City, Utah.

Sept. 17-20—KANSAS Geol. Soc., Wichita, Kansas. To south central Colorado. Write: 508 East Murdock, Wichita, Kansas.

ept. 18-20, 1958—ROCKY MT. ASSOC. OF GEOLOGISTS Field Trip, Marcon Basin of N.W. Colo., to be held in conjunction with Colo. Pennsylvanian Symposium guidebook presentation.

Oct. 4, 1958—UTAH GEOLOGICAL SOC., Ann. Field Trip to Stansbury Range. Write: 200 Mines Bldg., Uni. Utah, Salt Lake City, Utah.

ct. 11-12—NEW ENGLAND INTERCOLLEGI-ATE GEOLOGICAL CONF., New Haven and southern Connecticut. For details write: John B. Lucke, U-45 Storrs, Conn.

Et 16-18—NINTH ANN FIELD CONF., to Black Mesa Basin of NE Arizona. Sponsors: New Mexico & Arizona Gol. Soc's. Guidebook. For information write: Richard D. Holt, P.O. Box 1116, Roswell, N. M.

Oct. 27-29—GULF COAST ASSOC. of Geol. Soc's., Corpus Christi, Tex. Trip as conducted by Corpus Christi May 15-17.

ov. 7-8—WEST TEXAS GEOLOGICAL SO-CIETY. Field trip to Tordilla Hills Eocene & Miocene. Write: Robert Pavlovic, 1704 Alamo National Bldg., San Antonio 5, Texas.

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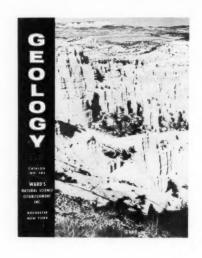
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This Month in GEOTIMES



Professional News Magazine

Published by THE AMERICAN GEOLOGICAL INSTITUTE

Robert C. Stephenson,

Kathryn Lohman CIRCULATION MANAGER

Vol. III. No. 2

SEPTEMBER, 1958

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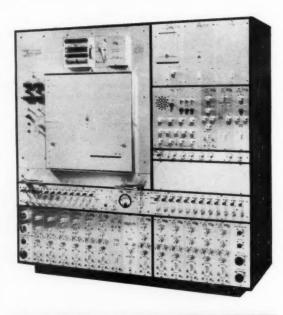
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GEOTIMES is published eight times a year by the American Geological Institute at Williams and Heintz Lithograph Corporation, Washington, D. C. Address all correspondence to 2101 Constitution Ave., N.W., Washington 25, D. C.

Subscriptions: GeoTimes is distributed to members of supporting Member Societies as a part of their society membership. Non-member rates—U.S.A. and Possessions, Canada and Mexico, \$2.00 per year; elsewhere, \$2.50 per year. Entered at Washington, D. C., as second-class matter.

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EXPLORATION IS A FORM OF INSURANCE. Exploration for petroleum and mineral resources is an insurance against future demands. The company buying "exploration insurance" has the same multitude of options that the individual has in providing insurance protection for his various risks. The company can make just as many "poor insurance buys" in exploration as the

unthinking individual in his personal plans.

importance in the company budget.

The planned estate is a balanced investment-insurance program to meet not only immediate but also long-range needs. The planned exploration program should also anticipate long-range as well as immediate needs. It should constitute a valuable part of company assets just as the planned estate is an important part of family assets. The sound family budget provides for insurance as one of the basic needs along with food, rent, and clothing; the planned exploration program should occupy the same position of fundamental

PLANNED EXPLORATION IS LACKING in far too many companies. Yes—they may buy "exploration insurance", but too often it is coverage comparable to air travel insurance. When a resource supply shortage stares them in the face, they rush out and buy short-term coverage at a high premium in the form of a crash exploration program, just as the air traveler buys trip insurance to the tune of two bits per each \$6,250 unit of coverage. When the trip (the crash program) is over, the coverage is gone. This kind of insurance program with regard to resources is typical also of our national policy, as evidenced by the ebb and flow of government funds for basic research relating to resources.

PAID UP INSURANCE of ever-increasing value is the reward of the company which has a soundly-planned exploration insurance program. The assets will not all be in the form of reserves in the ground. There will be increasingly valuable insurance in the form of experienced exploration personnel.

The company which has given attention to a "planned estate" in exploration insurance will see that the premiums are always paid on time, for they will not want to lose the valuable assets of the continuing resource protection. On the other hand, in times of special emergency they can readily extend this



OUR COVER

Smithsonite, the zinc carbonate mineral, is named after James Smithson, who gave the Smithsonian Institution to the people of the U.S.

U.S. Ektachrome by Jack Scott The AMERICAN GEOLOGICAL INSTITUTE is a non-profit professional service organization established and managed by the scientific societies in the fields of geology and geophysics in cooperation with the National Academy of Sciences-National Research Council. It is the instrument of the profession serving and advancing the welfare of the geoscientist in matters relating to education, professional responsibilities and government relations. It is an active member of the Scientific Manpower Commission. It also functions in the stimulation of public education and awareness of the earth sciences, through career literature, the scouting program and other channels of communication.

GEOTIMES is the news magazine of the geological sciences. It reports on current events in the earth sciences, public education and public relations efforts throughout the profession, as well as appropriate legislative and governmental issues. It announces scholarships, fellowships, publications and new developments. It provides a forum for discussion of timely professional problems, and affords a common bond between the many specialized groups within the earth sciences.





AGI MISSION 66 PROGRAM IN ACTION

Utah Geological Society sets local action pattern

Dr. Richard L. Threet, University of Utah, discusses geologic interpretation at Cedar Breaks National Monument with (left to right) Robert Barrel, (Threet), David Jones, and Park Naturalist Carl Jepson of the National Park Service.

Dr. Threet (left) makes a suggestion on geologic interpretation at Bryce Canyon National Park.

The AGI Mission 66 Committee has begun a program which promises to help popularize geology through visitors to our national parks and monuments. The parks certainly combine the necessary elements—interesting geology and millions of interested visitors.

For some time members of our profession have believed there was room for improvement in interpretation of geologic features found in the National Park System. This belief was shared by Park Service officials who wanted to do the best job possible in its museums, interpretive talks, and publications.

The National Park Service was faced with the following problem: Where could it get the professional advice necessary to make sure its geologic interpretations were accurate and up-to-date?

The U. S. Geological Survey has always helped the Service meet its geological needs, but advice on popular interpretation of park geology is a continuing activity. Advisors should be close to the parks. Also, the Survey thought the whole geo-

logical profession should be asked to take part in such a broad program.

AGI was the answer. Since AGI was sponsored by many professional societies, it could reach almost any geologist in the country. To consider ways of meeting Service needs AGI formed a committee of geologists who knew the parks and were appreciative of their problems.

UTAH GEOLOGISTS AID

The AGI Mission 66 Committee gave first priority to supplying professional advice to park naturalists in areas where museum exhibits are being planned. Since this program is new, the committee selected Zion and Bryce Canyon National Parks and Cedar Breaks National Monument for a pilot operation. Chairman James L. Dyson wrote Dr. Clyde T. Hardy, President of the Utah Geological Society, asking him if the Society would appoint advisors for this pilot study. Dr. Hardy agreed and appointed Drs. Richard L. Threet and Francis W. Christiansen of the University of Utah.

On July 14 Dr. Threet met with Park

AGI Mission 66 Committee

JAMES L. DYSON, Chairman
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College, Easton, Pa.

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Ball Associates, Denver
F. M. FRYXELL
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National Park Service, Washington
JOHN C. REED
U. S. Geological Survey, Washington
HOWEL WILLIAMS

University of California, Berkeley

Service officials at Zion National Park. During the next four days, the group visited Bryce Canyon, Cedar Breaks, and Zion. They studied interpretive planning in the three areas, and discussed problems with the superintendents. Dr. Threet made many valuable suggestions to improve exhibits and helped the Park Service men understand the regional geology. This latter point is vital in coordinating geologic interpretation in the three areas.

Dr. Christiansen was hospitalized during most of the conference, but was able to meet with the group on the last day. His past experience with the National Park Service and detailed knowledge of Bryce Canyon geology proved invaluable.

It is, of course, too early to evaluate the results of this pilot program, but several points are outstanding. The National Park Service has had the benefit of professional advice and review of its interpretive plans. The superintendents and their staffs have met geologists who are enthusiastic about helping in future geologic interpretation. In other words, the Park Service now has access to the professional knowledge of two geologists, Dr. Threet and Dr. Christiansen, who are familiar with the specific area in which their aid is sought, and liaison with the Utah Geological Society has been established. Publications, trailside signs, and geologic talks can be checked for accuracy by recognized authorities. The relationship should be a lasting one which will be mutually profitable to the Society and the Park Service.

LASTING PUBLIC RELATIONS

On the other hand, the AGI through its Mission 66 Committee has provided a coordinating function that will have lasting

SEGp Features Mexico

San Antonio October 13-16

The Society of Exploration Geophysicists will meet October 13-16 at the Municipal Auditorium in San Antonio, Texas. Headquarters will be in the Gunter Hotel.

The meeting will feature discussions of the oil exploration opportunities in Mexico which will be brought into focus by a special group of papers by geophysicists from Petroleos Mexicanos.

The geophysicists will hear a paper reporting on Magnetic Tape Recording of the Underground, Nuclear Explosion "Rainer." There will be discussions of the geophysical detection of nuclear explosion, a consideration which is of paramount importance in the cessation of nuclear testing.

NSF Research Grants

The Earth Sciences Program of the National Science Foundation is now receiving proposals for research grants that will be made in February and March 1959. Deadline for the receipt of proposals for work to begin in the spring or early summer is September 15, 1958. There are no formal application blanks, but a Foundation pamphlet describes the method of making application and outlines the information needed in a proposal. This pamphlet may be obetained by writing directly to the National Science Foundation, Washington 25, D. C., Attention: Earth Sciences Program.

results by aiding in an improved presentation of accurate and simplified geologic interpretations of southern Utah to millions of park visitors.

This field conference succeeded because all concerned wanted it to. Dr. Hardy and the Utah Geological Society picked good advisors. Dr. Stokes of the University of Utah Department of Geology provided field expenses for the advisors, and the National Park Service brought in men from San Francisco, Santa Fe, and Washington to participate in the conference.

Stimulated by the fine cooperation received from the Utah Geological Society, the AGI Mission 66 Committee is now planning several new projects in other areas. It is hoped that the pattern of liaison so successfully established between the geological profession and the Park Service in the southern Utah project will be repeated with equal effectiveness in all future projects.

Stanford's School of Mineral Sciences gets critical review

by JOHN W. HARBAUGH1

A Stanford University Alumni group has recently completed an extensive study of Stanford's School of Mineral Sciences. This study was undertaken at the request of the School's Dean, Charles F. Park, Jr., because of a desire to enlist outside opinion in the effort to keep the school thoroughly attuned to fast-changing demands and surrounding conditions. The study was made by a committee of the Mineral Sciences Associates, a group consisting largely of alumni and friends of the School of Mineral Sciences. The committee was requested to study the policies, methods, curricula and equipment of the school and to make recommendations by which the school might be further improved.

The committee conducted its study in two ways: (1) By actual visits and interviews at Stanford by subcommittees of the committee, and (2) by analyzing and tabulating replies to questionnaires that were returned by 175 concerns employing mineral scientists, including oil, mining, and manufacturing companies, and state geological surveys. These concerns were asked to compare Stanford with other universities, and to present their views on what is desirable in the training of geologists, geophysicists, and petroleum, mining and metallurgical engineers. The highlights of the results of this study are presented below.

Since this study is probably the most extensive kind ever undertaken in the mineral sciences, its results are of great interest. Although the study pertains to all the departments of the School of Mineral Sciences, which include geology, geophysics, metallurgical engineering, mining engineering, and petroleum engineering, many of the findings are of broad interest and may prove to be valuable to departments of geology-geophysics throughout the country.

Following are the broad recommendations embodied in the 179 page report prepared by the committee.

Concerning curricula, the School should:

 Give a four-year course in each department which would embrace

¹John W. Harbaugh is Assistant Professor of Geology, School of Mineral Sciences, Stanford University. a. Basic scientific principles.

 Fundamental principles of the profession.

c. Humanities.

Confine specialization to the graduate chool.

3. Keep curricula abreast of current knowledge, conditions, and needs.

Insure that students receive better training in spoken and written English.

Make students aware of basic problems and principles in the economics of their professional field, in human relations, and in ethics.

6. Require an original research problem and report or thesis for a master's

7. Avoid a multitude of small fragmental courses in favor of fewer and broader courses.

8. See that courses in other departments are complete and not merely orientation courses.

9. Expand the use of visiting lecturers.
10. Emphasize summer geology and field studies and encourage summer employment in the profession.

Concerning faculty, the School should:

1. Maintain a high student-faculty ratio (7:1 or better).

2. Make a periodic poll of student opinion by anonymous questionnaires, and give careful consideration to its findings.

Organize and conduct a long-range recruitment effort to meet the competition for the highest type of teachers.

 Continue to provide an academic climate conducive to original thought and basic research.

5. Increase faculty compensation as soon as possible to a level nearer to that offered by industry, and keep it adjusted to future inflationary influences.

6. In counseling students, take the individual student's needs and aptitudes into consideration and direct the counseling effort toward undergraduates in at least an equal degree as toward graduate students.

7. Encourage research, preferably basic or pure, in the proper balance with teaching.

8. Encourage summer employment, where it does not conflict with teaching

AAPG Educational Exhibits

The AAPG Educational Exhibits Committee, under the chairmanship of G. Frederick Sheperd, Bettis and Sheperd, Dallas, is formulating plans for the exhibits of geological organizations at the Dallas meeting of the AAPG-SEPM, March 16-19. An innovation in these exhibits will be an Educational Exhibits Library in which publications of an educational nature will be on display together with convenient order cards.

duties, as a means of increasing compensation and keeping faculty members abreast of developments within, and the needs of, industry.

Concerning students, the School should:

1. Assist and support programs to acquaint students of secondary schools with mineral sciences and, through the public relations arm of the University, help the public also to become aware of them.

Secure as many as can be accommodated of the highest type and best fitted students for the school through counseling, by making the basic geology courses as interesting and inspiring as possible, and by other means.

3. Keep the entrance and other requirements high in the graduate school and endeavor, through fellowships and otherwise, to attract the highest type of grad-

4. Maintain or improve the faculty-

student relationship now existing.

Concerning finances, the School should:

 Set and work toward a long-term goal for an endowment of \$4 million.

2. Corporations and individuals should be solicited for scholarships, fellowships, endowed chairs, research grants, grants-inaid, and for gifts for equipment and space. Corporations especially should be made to feel their responsibility and stake in the school's welfare.

3. Make a listing of pressing equipment needs, with suitable priorities assigned to the various items, and program these needs against future income. Where they cannot be filled from foreseeable income, donations should then be solicited from industry, alumni, and friends.

Concerning the School in general, it should:

1. Endeavor to attract the highest type of students, and to emphasize high academic standards rather than increased size.

In geophysics concentrate, at least for the present, on excellence in geologicalgeophysical instruction rather than on advanced geophysical theory and research.

GSA MEETING SHAPES UP

St. Louis Nov. 6-8

The 1958 Annual Meeting of the Geological Society of America is to be held in the Sheraton-Jefferson Hotel, St. Louis, Missouri, November 6-8, 1958. Meeting with the GSA will be the Paleontological Society, Mineralogical Society of America, the Geochemical Society, the Society of Economic Geologists, and the Association of Geology Teachers. The AGI will also hold its annual meeting of the Board of Directors and committee meetings.

By late July 314 papers had been submitted for presentation. These papers cover a wide range of subjects, but the greatest concentrations are in Mineralogy-Crystallography, Petrology-Petrography, Geochemistry and Economic Geology. A substantial number of papers relating to structure, stratigraphy and sedimentation are scheduled.

Dr. Arthur B. Cleaves, Publicity Chairman for the meeting, reports that he has received numerous requests for further information on the Engineering Geology sessions as reported on in the July-August issue of GeoTimes.

Five field trips are planned, three prior to the meeting on November 5 and two following. John S. Brown will lead a one-day trip to study The Stratigraphy Mineralization and Mining Operations, Missouri Lead Belt. H. B. Willman and John C. Frye will conduct a trip dealing with the Problems of Pleistocene Geology in the Greater St. Louis Region. C. W. Collinson and D. H. Swann will be the guides on a trip which will study the Mississippian Rocks of Western Illinois.

Following the meeting, J. Harlen Bretz will lead a group on Nov. 9 to visit Missouri Caves and Walter V. Searight will conduct a three-day trip, No. 9-11 to study the Pennsylvanian of Missouri.

Persons who wish further information on the program and field trips of the annual meeting should address their inquiries to: St. Louis Meeting, c/o Geological Society of America, 419 West 117th St., New York 27, New York.

You saw it in Geo Times . . .

New catalogue of field and sports equipment of interest to field geologists, featuring wide selection of down filled clothing and sleep equipment is now available from Eddie Bauer, Dept. GX, 160 Jackson St., Seattle 4, Washington.

INTERNATIONAL MINERALOGICAL ASSOCIATION

Formed to promote international cooperation

The International Mineralogical Association was inaugurated at a meeting in the Salon de Juntas of the Consejo Superior de Investigaciones Cientificas in Madrid on April 8, 1958. Professor F. Laves presided over the meeting of delegates from fourteen nations assembled to found the I.M.A. with the aim to further international cooperation in mineralogical science. Present

were:	
AUSTRIA *Dr. A. Preisinger	JAPAN *Prof. T. Ito
BELGIUM Dr. R. van Tassel	Dr. N. Katayama Dr. I. Sunagawa
CANADA *Prof. L. G. Berry	NETHERLANDS *Prof. F. E. de Wijs
*Prof. T. G. Sahama	SPAIN
FRANCE *Mlle. S. Caillere	*Prof. J. L. Amoros Prof. V. Aleixandre
Dr. C. Guillemin	SWEDEN

Prof. F. Laves Prof. F. Leutwei Prof. H. Winkler *Prof. R. L. Parker GREAT BRITIAN
*Prof. C. E. Tilley
Dr. N. F. M. Henry U. S. A. *Prof. M. J. Buerger Prof. C. Frondel *Prof. E. Onorato Dr. M. Fornaseri Dr. G. Fagnani U. S. S. R. *Prof. D. P. Grigoriev

*Prof. F.E. Wickman

Prof. Vlassow

SWITZERLAND

* Denotes voting delegates.

GERMANY

The Statutes and Bylaws of the International Mineralogical Association (see) were discussed and adopted at the inaugural meeting and on the following day the first officers for the Society were chosen as follows:

PRESIDENT: Robert L. Parker, Zurich, Switzerland

FIRST VICE PRESIDENT: Frans E. Wickman, Stockholm, Sweden

SECOND VICE PRESIDENT: Dmitry P. Grigoriev, Leningrad, USSR

SECRETARY: Jose L. Amoros, Madrid, Spain TREASURER: D. Jerome Fisher, Chicago, U.S.A.

COUNCILORS Tei-ichi Ito, Tokyo, Japan Ettore Onorato, Rome, Italy Jean Orcel, Paris, France

ADVISORY MEMBER (in lieu of Past Pres.): G. Frank Claringbull, London, England.

Four commissions were established by vote of the delegates to the Madrid meeting as follows:

COMMISSION ON ABSTRACTS Chairman: Prof. Onorato, Secretary: Dr. Henry

COMMISSION ON DATA Chairman: Prof. Strunz, Secretary: Prof. Pabst

COMMISSION ON NEW MINERALS Chairman: Dr. Fleischer, Secretary: Dr. Guillemin

COMMISSION ON MUSEUMS Chairman: Prof. Frondel, Secretary: Prof.

In addition to the organizing sessions, four others were held at which the delegates discussed the following topics: Nomenclature and new minerals; mineralogical museums; mineralogical abstracts; mineral data and publications. A symposium was also held dealing with present and future work in mineralogy, geo-chemistry and petrography. The speakers were: V. Aleixandre, M. Fornaseri, D. P. Grigoriev, T. Ito, F. Laves, A. Preisinger, T. Sahama, A. San Miguel and C. E. Tilley.

After the inaugural meeting the delegates were offered a Vino de Honor by the C.S.I.C. They were also entertained to a formal dinner at the close of the Madrid

Many delegates took part in an excursion from Barcelona to the Costa Brava and in another which included visits to Toledo, the lead mines of Linares, Valdepenas, Cordoba, and Granada.

HISTORICAL BACKGROUND

On November 1, 1956 at Minneapolis e Mineralogical Society of America (MSA) decided to investigate the possibility of forming an International Mineralogical Association (IMA). The President, with the approval of the Council, appointed the following committee to implement this motion: M. J. Buerger (chairman), J. D. H. Donnay, J. W. Gruner, A. Pabst and S. C. Robinson, with corresponding members G. F. Claringbull, C. Guillemin, and H. G. F. Winkler. (Amer. Mineral., 42,

1957, 270). This committee acted so expeditiously that a first international meeting was held at Montreal July 16, 1957 at the sessions of the International Union of Crystallography. Delegates from twelve countries besides Canada and the United States were in attendance. All continents but Africa were represented. Nine European countries including the U.S.S.R. sent delegates. The following was accomplished: (1) election of three interim officers and six delegates to an organization meeting. These included Chairman G. F. Claringbull, Vice-chairman F. Laves, Secretary-Treasurer J. L. Amoros, and Councillors L. G. Berry (Canada), M. J. Buerger (U.S.), M. Fornaseri (Italy), D. P. Grigoriev (U.S.S.R.), C. Guillemin (France), and F. Wickman (Sweden); (2) a committee selected from the interim officers was designated to prepare a constitution; (3) a meeting was scheduled for Madrid in April 1958; and (4) there was discussion of needed commissions. (Amer. Mineral., 43, 1958, 352.)

On December 10, 1957 a first circular was sent by the provisional committee to all mineralogical societies inviting them to send delegates to an Inaugural Meeting to be held in the week beginning April 6, 1958 at Madrid. The circular also contained the provisional committee's proposals as to what commissions should be set up by the I.M.A. to cope with various problems and difficulties besetting mineralogists in all countries and calling for international cooperation. Circulars with further details of the agenda and program of excursions to be carried out before and after the inaugural meeting were sent in February and March 1958 to the various mineralog-

ical societies.

STATUTES AND BY-LAWS

OF THE
INTERNATIONAL MINERALOGICAL

- ASSOCIATION
 1. NAME. The name of the organization shall be "The International Mineralogical Association".
- 2. OBJECT. The object of the Association shall be to further international cooperation in mineralogical science.
- 3. MEMBERS. The members of the Association shall be Mineralogical Societies (or other equally representative bodies of mineralogists) of national standing; only one such society or body from any one country may join. In what follows the words "member society" shall be deemed to include such a representative body. Applications for membership should be sub-

mitted to the Executive Committee which has power of decision.

- 4. REPRESENTATION. Each member society shall have the right to be represented by one delegate with power to vote. In addition, alternates up to a maximum of four representing each member society may be present at business meetings, but these shall not have power to vote.
- 5. EXECUTIVE COMMITTEE. The Executive Committee shall consist of nine members. The officers of the Association shall be the President, the First and Second Vice President, the Secretary, the Treasurer, three Councillors, and the retiring President.
- 6. ELECTION OF EXECUTIVE COM-MITTEE. The Executive Committee shall be elected by ballot. Nominations for the offices of the new Executive Committee shall be made by the acting Executive Committee. Delegates shall be entitled to make additional nominations for these offices, provided that at least three delegates nominate the same person for a particular office. No delegate shall nominate more than one person for a particular office. The secretary of the Association shall circulate all nominations to the delegates at least ten weeks before the date of election. Each delegate shall have one vote for each office to be filled.
- 7. TERM OF OFFICE OF THE EXEC-UTIVE COMMITTEE. The officers of the Executive Committee shall hold office for four years (except those first elected).
- 8. FINANCE. The Executive Committee shall be responsible to the Association at its business meetings for the conduct of financial affairs. Each member society shall pay annually to the Association the following dues, these being based on its resident personal membership for the preceding year:
 - (a) Resident personal membership up to and including 150: 2 units.
 - (b) For each additional hundred or part thereof: 1 unit.

The value of the unit will be decided at each business meeting.

- 9. POWERS OF THE EXECUTIVE COMMITTEE.
 - (a) The Executive Committee shall be charged with the conduct of such business as may be delegated to it by the business meeting of the Association and shall have authority to act for the Association between business meetings of delegates.

(Continued from page 11)

(b) At meetings of the Executive Committee the quorum shall consist of five, of whom two at least shall be the president and/or a vice-president and the secretary.

10. COMMISSIONS.

- (a) The Association shall have as many commissions to carry on its work as shall be decided by business meetings of delegates.
- (b) The chairman, secretary, and the members of each commission shall be nominated and elected at a business meeting of delegates. Further members may be co-opted and vacancies may be filled by the commissions themselves.
- (c) The Commissions shall be responsible to the business meeting of delegates, but shall in general have freedom to draw up their own rules of procedure, their method of work, and dates of their meetings.
- (d) The chairman of each Commission shall report on its activities to the business meeting of delegates. These reports shall be sent to the secretary of the Association at least fourteen weeks before the date of the business meeting of delegates. The secretary of the Association shall send these reports to the delegates at least ten weeks before the business meeting of delegates.

11. BUSINESS MEETINGS.

- (a) A business meeting of delegates shall be held as often as deemed necessary by the Executive Committee, but at least once every four years.
- (b) A business meeting shall be called by the Executive Committee on the written request of one quarter of the delegates, as soon as possible, but in any case within one year.
- (c) A quorum shall consist of one-third of the delegates.

12. APPOINTMENT OF AUDITORS. The business meeting of delegates shall appoint auditors to audit the accounts and scrutinize the ballot votes.

13. AMENDMENTS. The statutes and by-laws can only be amended at business meetings. Notice of the proposed amendments shall be given to the delegates at least ten weeks before the date of business meetings. A two-thirds majority of the delegates present at the business meeting

Geoscientists in the News

C. H. Green was recently elected to a five-year term as a member of the Massachusetts Institute of Technology Corporation. Mr. Green, Chairman of the Board of Directors of Geophysical Services, Inc., has long been recognized as a leader in education. One of the outstanding results of his efforts is the GSI Student Cooperative Plan, designed to provide on-the-job summer experience for qualified college students majoring in geology and geophysics. A graduate of MIT in electrical engineering in 1924, he began his career in geophysics with GSI in 1930 when the company was first formed. He received an honorary doctor's degree in engineering from the Colorado School of Mines in 1953.

A. G. OLIPHANT, Tulsa geologist, recently made the gift of a new liberal arts building to the University of Tulsa. He has long been identified as a generous supporter of Tulsa University, through many notable gifts which include the A. G. Oliphant Geological Library and the Oliphant Student Aid Fund. He received his education at Tulane and worked for J. S. Cosden, Carter Oil Co., and the Peters Petroleum Co. before becoming an independent geologist and producer in 1922. He has been a member of AAPG since 1927.

THOMAS S. HARRISON was awarded an honorary doctor of laws degree in June by the University of Wyoming. Long associated with Argo Oil Corporation, Mr. Harrison, a petroleum geologist, has been well known in Rocky Mountain and national oil circles for many years. A graduate of the Colorado School of Mines, he served on the Board of the School of Mines from 1937 to 1954.

Geologists E. F. Bullard and A. L. Solliday were pictured in the Tulsa World on June 11 when they were elected to top posts in the Pan American Petroleum Corporation. Mr. Bullard came up through the ranks of the geology departments of the Dixie Oil Company and Stanolind (which became Pan American in 1957). He has been active in the affairs of AAPG and AIME. Solliday, a graduate of geology from the University of Oklahoma, followed a similar course through the geological departments of these companies.

shall be required in order to effect any such change. Proposed amendments to the statutes and by-laws should be submitted to the Executive Committee at least fifteen weeks before the business meeting.

SPACE SCIENCE BOARD

George Woollard, Harrison Brown and Harold Urey named

Dr. Detlev W. Bronk, President of the National Academy of Sciences—National Research Council, recently announced the appointment of a 16-man Space Science Board "to survey in concert the scientific problems, opportunities and implications of man's advance into space."

Dr. Lloyd V. Berkner, President of Associated Universities, Inc., who holds a number of important posts in the scientific community, has been named chairman. Serving with him will be Dr. Harrison S. Brown, Dr. Leo Goldberg, Dr. H. Keffer Hartline, Dr. Donald F. Hornig, Dr. W. A. Noyes, Dr. R. W. Porter, Dr. Bruno B. Rossi, Mr. A. H. Shapley, Dr. John A. Simpson, Dr. S. S. Stevens, Dr. Harold C. Urey, Dr. James A. Van Allen, Dr. O. G. Villard, Jr., Dr. Harry Wexler and Dr. George P. Woollard. Dr. Hugh Odishaw will serve as Executive Director for the new board.

Dr. Urey, the prominent physical chemist associated with the Enrico Fermi Institute of the University of Chicago, has long been interested in geological-geophysical problems. He is a fellow of the Geological Society of America and holds memberships in the Geochemical Society and the American Geophysical Union.

Dr. Harrison Brown, geochemist from the California Institute of Technology, has a wide range of geological interests but is particularly active in the fields of geochemistry, petrology and volcanology. During the past year Dr. Brown was appointed chairman of the Committee on Oceanography of the NAS-NRC.

Dr. George P. Woollard of the Department of Geology, University of Wisconsin, was picked for the Space Board particularly to represent the area of geodesy. Dr. Woollard, who received his PhD in geology at Princeton, is active in many phases of geology and geophysics.

The geological profession has more than ample representation on the Space Science Board through these three men. The extent to which they can represent the interests and wishes of the profession will depend, of course, on the effectiveness of communication channels established by the profession.



Once upon a time there were 20,000 cosmologists on the wrong side of the river. Although their work could be carried on pretty well where they were, it was plain that they would be better off on the other side, in the land of Pubedproregore, where public education, professional responsibilities, and government relations could be much better cultivated.

Accordingly, the cosmologists appointed a committee, which reported in due time that a bridge ought to be built. The profession kicked this idea around for a while, and decided that a bridge would cost too much. (One of their major societies had better than 5 million bucks in the till, and the other represented a 20-billion-dollar industry, but each felt it was too poor to help build a bridge. Besides, the Association of Cosmological Pedagogues, which had a treasury of \$41.83, protested that it ought to have a say, too.)

A genius then pointed out that a ferry boat was a whole lot cheaper than a bridge, and maybe the profession could buy a second hand one and hire a nonunion skipper. Cosmologists could then get across the river at cut rates—slowly, it was true, but who was in a hurry?

And indeed it was done. At an average cost of \$0.00004 per cosmologist per year, a ferry service was set up to the land of Pubedproregore. But there were more passengers and freight than could well be handled, and the ancient motor of the boat kept sputtering and threatening to quit. A succession of captains did quit, and the whole operation was less than a howling success.

What to do? Appoint committees, of course. One society found, through its committee, that by using Bunker C instead of kerosene in the motor, the cost could be reduced to \$0.000035 per cosmologist per year. Another found that savings could be made by reducing the number of round trips per year from 12 to 8. It was so ordered.

Today, if you wander down to the river, you can see the cosmologists' ferry boat wheezing back and forth, in the shadow of the magnificent bridges belonging to the biologists, chemists, and physicists.

Moral: A profession's advance may be arrested, but a penny saved can be re-invested.



Scientific Manpower Commission 1507 M Street, N.W., Washington 5, D. C.

A politician has been described as a biped who can sit on a fence and keep both ears to the ground. It's a neat trick, but not everybody can do it. One wonders whether the mining and geological professions aren't trying it-with indifferent suc-

This past June, 90 percent of all graduating engineers, except mining, had jobs, job offers, or graduate fellowships before commencement. We understand the rest were placed soon after. There weren't enough graduating physicists and mathematicians for the jobs available, and the chemists did about as well as the engineers.

The story we get from departments of geology is not so good. One department placed "all its good people." Another scored only 30 per cent. In many others the going was rough, as GeoTimes predicted back in April.

Why? Recession? In part, yes-oil and mining companies have retrenched, a few to the point of terminating all exploration. In larger part, no! The current depression in the employment market in mining reflects the lack of a domestic mineral policy. And this lack, in turn, reflects the unwillingness of the industry to agree on fundamental matters of policy.

Two years ago an Advisory Committee on Minerals Research reported to the National Science Foundation that "the organization required to conduct, administer, and finance research programs in [geology, geophysics, and geochemistry, where basic research is urgently needed] should receive its general support from the mining industry and other private sources."

But the industry has taken no action on the recommendations of the committee. It is also split wide open on such questions as imports, subsidies, and tariffs. On the morning this column was written, one of the industry's staunchest supporters in the U.S. Senate pronounced this benediction:

"Until you miners and geologists can agree among yourselves on something, neither the Congress nor the Administration-Democratic or Republican-can help you. And without a policy you are imperiling the national welfare and security."

(Not to mention employment for earth scientists.)

AAPG Distinguished Lectures

The Distinguished Lecture Committee of the American Association of Petroleum Geologists has announced a roster of outstanding lecturers who will participate in their 1958-59 Program. The speakers and their topics are listed below.

Geophysics and Stratigraphic Problems by G. H. Westby, President, Seismograph Service Corp., Tulsa, Okla.

Mechanics of Basin Evolution and its Relation to the Habitat of Oil in the Basin, by Karl F. Dallmus, Research Geologist (ret.), Creole Petroleum Co., Caracas, Venezuela

Limestone Sedimentation and Stratigraphic Traps, by Dr. Ralph W. Edie, Andrichuk and Edie, Calgary, Alberta

Future of American Petroleum Geology, by Dr. Frank B. Conselman, Consulting Geologist, Abilene, Texas

Tectonic History of the Western Pacific States, by Dr. L. R. Laudon, Prof. of Geology, Univ. of Wisconsin, Madison

Crustal Structure of the Earth as Revealed by Gravity and Seismic Studies with Isostatic Implications, by Dr. George P. Woolard, Prof. of Geology, Univ. of Wisconsin, Madison

Exploration of Antarctica, by Rev. Daniel Linehan, S. J., Director, Weston Observatory, Boston College, Weston, Mass.

Further information on the availability of these lectures may be had by writing Dr. B. W. Beebe, Chairman, AAPG Distinguished Lecture Committee, 1300 N. Broadway, Oklahoma City, Okla.

Mexican Congress Guidebooks

Guidebooks for a number of the field excursions of the XXth International Geological Congress, Mexico, 1956, are now available in Spanish from the Organizing Committee. A list of these guidebooks with instructions for ordering may be had by sending a self-addressed, stamped envelope to the American Geological Institute.

The printing and distribution of publications of the XXth Congress is progressing. The amount of time, money, and effort required to put all of the papers of the Mexican Congress into print and to provide for world-wide distribution is tremendous.

CRATERS of the MOON

This new visitor center at Craters of the Moon National Monument opened June 1 after the dedication by Secretary of Interior Fred A. Seaton. Located near Arco, Idaho, the monument encloses lava flows, cinder cones, and other volcanic phenomens of recent origin. This visitor center, a Mission 66 project, contains exhibits which explain the local geology to visitors. Behind the building are some of the older lava flows.



BOY SCOUTS

REPORT TO CONGRESS

The 48th annual report to the Congress of the United States was published recently as House Document No. 353. From page 18 of this report we quote as follows:

"Geology.—Under the theme of the 'Greatest Show on Earth' during October 1957 Boy Scouts and their leaders enjoyed an unusual and challenging program. Three national organizations of geologists cooperated to the fullest to give Scouts an insight into the wonders of this earth science: American Geological Institute, American Association of Petroleum Geologists, and American Petroleum Institute.

A total of 76,000 geology kits developed by the American Petroleum Institute and distributed by councils to troops helped bring this program to a fitting climax. In view of the urgent need for scientists in America, this effort was especially timely. We feel confident that the doors to a new and challenging vocation were opened to many young men during the month of October. In addition, lasting associations between professional geologists and councils were established that will pay dividends for many years to come."

Incomplete returns on the number of scouts earning the geology merit badge as listed in this report show an increase from 1,961 in 1956 to 2,275 in 1957. Since Geology Month was late in the year, the final total may be substantially higher. As reported, there was a 17 per cent increase in the geology merit badges earned in 1957 over the previous year, as compared to a 1.5 per cent loss in the total for all merit badges awarded. More than 42 per cent of the badges, including three required subjects, showed a loss for the year.

ABSTRACT COMMISSION MEETS

The Commission appointed by the XXth International Geological Congress to consider an International Geological Abstracting Service will meet in Holland in September. Dr. Earl Ingerson, AGI representative on the Commission, is expecting to attend the meeting together with Dr. Robert C. Stephenson, Executive Director AGI. The September meeting will consider a number of important problems.

The American Geological Institute has been assisting the Commission by conducting a survey of interest in and probable support of an International Journal of Geological Abstracts. An article about the Survey which appeared on page nine of GeoTimes, March, 1958, indicated that the survey would not include Eastern European countries. Following the wishes of the Commission, all countries adhering to the International Geological Congress have been contacted with regard to the distribution of questionnaires and questionnaires have gone out to all corners of the globe.

In the U. S. and Canada the survey was restricted to a 25 per cent sampling of the professional geoscientists. A large number of these questionnaires have been returned and are being analyzed. The questionnaires mailed overseas are coming in slowly. It is doubtful that a significant analysis of these overseas returns can be made until early 1959.

The Geological Society of America has been publishing Geological Abstracts, a quarterly journal, for the Member Societies of the AGI since 1953. The Council of the GSA, following its spring meeting, advised the AGI that the publication would be discontinued by GSA on January 1, 1959. The Institute is currently considering the problems involved in taking over Geological Abstracts.

The World's Finest Mineral Collection

The Smithsonian opens new Gems and Minerals Exhibit Hall

The mineral kingdom is displayed in breath-taking beauty in the new Gems and Minerals exhibit hall of the Smithsonian Institution which was opened to the public on August 1. The museum's fine collection of minerals has been lifted from drab, lifeless cases and placed in sleek, modern surroundings. The multihued natural beauty of the minerals is accentuated by touches of contrasting background colors and carefully planned illumination. In its new splendor the Gems and Minerals exhibit has great appeal to the visiting public even though their knowledge of geology and minerals may be scant or lacking. For the professional geological scientist the first visit to the hall will be a spine-tingling experience.

The new Gems and Minerals exhibit hall has a special niche in the rich heritage of the Smithsonian Institution. Upon entering the exhibit, one's attention is focused almost immediately on the centrally featured display of Smithsonite (front cover), the zinc carbonate mineral named in honor of the English chemist-mineralogist, James Smithson, whose generous bequest to the government of the United States provided for the establishment of the

Dr. Leonard Carmichael, Director of the Smithsonian Institution, made the following significant remarks in his brief address at the time of the opening of the new hall:

"Minerals play a much more important role in our lives than many realize. Minerals constitute the raw material from which most manufactured goods are derived. A knowledge of minerals has an obviously important place in the researches of scientists in the fields of mineralogy, geology and soil science. They are also frequently employed materials in the work of the chemist, the physicist and engineer. Biological and medical scientists also encounter problems that require the use of mineral substances or a knowledge of their properties. The Smithsonian's collections and the skill and knowledge of our scientists are continuously consulted by workers who may turn to us for assistance.

The new Gems and Minerals exhibit hall is a part of an extensive modernization and revitalization program. It is housed in the Natural History Building of the U. S. National Museum, one of the Smithsonian's buildings on the Mall in Washington. Impressive as it is, the public display seen in the new hall is but three per cent of the entire Smithsonian mineral collection, which is the world's finest. Nearly 2,000 specimens are on exhibit.

TOPICAL DISPLAYS

As one enters the Gems and Minerals exhibit hall he finds on the left a display of historical significance drawing attention to the Canfield and Roebling mineral collections and the Isaac Lea collection of precious stones which form the nucleus of the Smithsonian's fine collection. In the same area are the topical displays "The Mineral Kingdom," "From Nature's Laboratory," and "What is a Mineral?"

The visitor moves then to the section on the physical properties of minerals, which includes an exhibit of mineral radioactivity and a captivatingly beautiful display of fluorescent minerals.

The central part of the mineral hall is devoted to displays which group the minerals according to the Dana classification. Many of the individual specimens in these groups show the beautiful colors and graceful symmetry of minerals. The minerals are handsomely arranged against a rich gray fabric under indirect illumination to provide the most favorable display of their natural beauty and color.

Before entering the gem hall the visitor encounters four displays from famous mineral localities. These include the Dr. James Douglass Collection of copper minerals from Bisbee, Arizona, and collections from

(Continued on page 21)

Plan of Smithsonian Institution Gem & Minerals

Exhibit Hall









- e Bisbee, Ariz.
- · Franklin, N. J.
- · Southwest Africa
- a TruState District

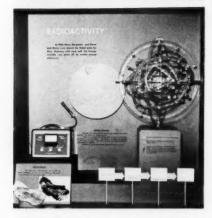


SYSTEMATIC COLLECTION



TOPICAL EXHIBIT







Top: Dr. Leonard T. Carmichael, Secretary, Smithsonian Institution, looks on as Mrs. William Foshag cuts the ribbon to open the new Gems & Minerals exhibit hall at the National Museum.

Above: Featured here are portraits of the donors of principal collections which contribute to the greatness of the Smithsonian's collection: Washington A. Roebling (u.l.), Frederick A. Canfield (I.I.), and Isaac Lea (r).

Left: Uranium ore specimen on revolving disc provides working exhibit of mineral radioactivity.



The SMITHSONIAN INST



GEMS and MINE



Irom nature's laboratory...

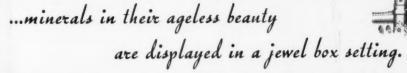


INSTITUTION

MINERALS









Credit for these fine photo-graphs of the Gems and Minerals Hall goes to Jack Scott, staff photographer, Geology Division, National Museum. Color in Ek-

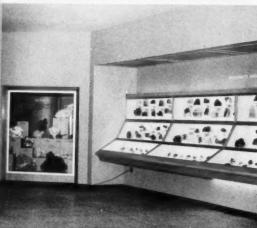
The exhibit of opals in the hall of gems.

4.64.4.

• A general view of a section of the display cases in the mineral hall.







(Continued from page 16)

Tsumeb, South West Africa, Franklin, New Jersey and the Tri-State District of Missouri, Oklahoma and Kansas.

GEM HALL

From the mineral exhibits one enters the richly paneled hall where the most extensive collection of gems in this country is on display. Nearly every variety of gem is represented. Among the precious stones displayed are a 316-carat star sapphire, a 66-carat alexandrite, and a 310-carat peridot.

One of the most valuable specimens in the fine Smithsonian gem collection is the Shepard diamond, a flawless canary-yellow stone weighing 18.3 carats.

Also on display is one important memento of Early Americana—the original gold nugget discovered at Sutter's Mill, California, by James Marshall in 1848 which set off the gold rush of '49.

JAMES SMITHSON

Minerals are deeply rooted in the heritage of the Smithsonian Institution. James Smithson, an Englishman, was a chemist with a great interest in minerals. Out of twenty-seven scientific papers which he published between 1791 and 1825, twentyfive dealt with chemistry and mineralogy. Despite the primitive apparatus and crude reagents of the times with which he had to work, James Smithson achieved analytical results of a most creditable quality and enlarged greatly the current knowledge of many mineral species. Before his time zinc carbonate and zinc silicate were confused under the name "calamine," but his research work distinguished between the two now known as smithsonite and hemimorphite.

Smithson spent most of his life on the continent of Europe and never visited the United States. When he died in 1829, however, he left his personal fortune valued at about \$550,000 and his collections to the people of the United States with the stipulation that there would be founded in Washington "under the name of the Smithsonian Institution, an Establishment for the increase and diffusion of knowledge among men." News of the bequest reached the Secretary of State in 1835 but there was prolonged and vigorous debate in Congress before the gift was finally accepted. It was not until August 10, 1846 that President James Polk signed the Act of Incorporation founding the Smithsonian Institution.

The mineral collection of the Smithsonian was relatively small until the last two decades of the 19th century. During this period the Department of Geology was

formed within the U. S. National Museum and large quantities of geologic and mineral materials were received as a result of the Centennial Exposition of 1876 and other expositions of the era. Important additions to the collection also came from the very active government surveys of the day.

CANFIELD AND ROEBLING

The mineral collection of the Smithsonian Institution reached a position of preeminence among the great collections of the world in 1926 when two great private collections were presented to the Institution. One was the Frederick A. Canfield collection; the other was that of Colonel Washington A. Roebling, the great engineer, of whose many accomplishments the best known was the building of the Brooklyn Bridge. His zeal for his avocation, mineral collecting, matched his abilities as an engineer, for he built the largest and finest private collection of all time. Colonel Roebling's collection was especially valuable for research and study, for he attempted seriously and with remarkable success to collect representative specimens of every known mineral species. Despite the great pride of ownership usually typical of an avid collector, he was always mindful of the importance of his collection to the competent research workers with whom he so generously shared it.

The Canfield collection was accompanied by an endowment when it was presented to the Smithsonian as was the Roebling collection which was presented in the name of Washington A. Roebling by his son John A. Roebling, The funds generated by these endowments have been important in maintaining the eminence of the Smithsonian collection over the ensuing thirty-two years.

GEM COLLECTION

To F. W. Clark of the U. S. Geological Survey goes the credit for starting the gem collection, for in 1884, as honorary curator of the Division of Minerals, he assembled a display of American precious stones for the New Orleans Exposition. Ten years later Mrs. Frances Lea Chamberlain bequeathed to the Museum a collection of precious stones which had been made by her father, Dr. Isaac Lea. Later, in 1897, her husband, Dr. Leander T. Chamberlain, became honorary custodian of the gem collection and was responsible for adding many desirable specimens. In his will he provided for an endowment in his wife's name, the income from which has permitted the addition of some significant specimens to the gem collection.

WILLIAM FOSHAG

The history of the growth and development of the Smithsonian mineral collection into the world's finest is not complete without mention of the late Dr. William F. Foshag, who was Head Curator of Geology at the Museum at the time of his death in 1956. "Bill" Foshag, fondly remembered by his many colleagues, first became associated with the Museum in 1919 as assistant curator of the Division of Mineralogy and Petrology. During this period the Canfield and Roebling collections came to the Smithsonian and through Dr. Foshag's guiding efforts the collection grew in importance. At the dedicatory ceremonies the Smithsonian was privileged to have Mrs. Foshag present to cut the ribbon opening the new Gems and Minerals Hall in tribute to her late husband's signal

The planning, design and installation of the new hall have been under the direction of Dr. George Switzer, Curator of the Division of Mineralogy and Petrology, ably assisted by the Associate Curator, Paul E. Desautels and other members of the staff. The exhibit was produced by the Smithsonian's exhibit staff under John E. Anglim, assisted particularly by Harry Wooley and by Rolland O. Hower to whom goes the credit for design.

STUDY COLLECTION IMPORTANT

In addition to the public display on exhibit in the Gems and Minerals hall, the Smithsonian has a study collection which contains the largest number of mineral species of any single collection. Included are many type specimens. In building this collection an effort has been made to include not only the maximum number of species but also the best possible representation of localities and paragenetic associations. This type of collection becomes increasingly valuable for study purposes with the passing of time.

All professional geoscientists and particularly the research workers should realize the importance of contributing new and significant materials to the collections of the Smithsonian. The National Museum is a proper depository for type material and there is adequate provision for proper cataloguing and storage so that the materials may be available to future research workers the world over. Federal agencies are required by law to contribute materials to the Smithsonian but the interest and cooperation of non-government scientists in maintaining and adding to the collections is vital.

Oliver Bowles

Oliver Bowles, internationally known geologist-engineer, died on August 1 at the age of 81. Dr. Bowles was associated with the U. S. Bureau of Mines for 44 years, and had served the Bureau in special capacities since his retirement in 1947.

"Mr. Industrial Minerals" was a fitting title for Oliver Bowles, for he was one of the truly outstanding leaders in the important non-metallic mineral field. His wide circle of friends respected highly his professional abilities and derived much pleasure from his fine personal characteristics.

Dr. Bowles was the author of the important "The Stone Industries" and was vice chairman of the AIME Committee for the earlier editions of "Industrial Minerals and Rocks." He is credited with the perfection of a wire saw which has been so important in the economics of slate production. He was a member of AIME and SEG. He was a charter member of the MSA and was an honorary member of the British Institute of Quarrying.

John B. Reeside

Dr. John B. Reeside, one of the outstanding paleontologists of our time, died in Washington on July 2. Dr. Reeside, who received his degree in geology from the Johns Hopkins University, served on the staff of the U. S. Geological Survey throughout his professional career and for 17 years was Chief of the Paleontology and Stratigraphy Branch. He was honored many times by the profession. He was a past president of the Paleontological Society and a member of the National Academy of Sciences, which in 1946 awarded him the distinguished Mary Clark Thompson award

Dr. Reeside was known particularly for his studies of Mesozoic fauna and stratigraphy in the western United States.

You saw it in Geo Times . . .

Geonautics, Inc. has recently opened a Pacific Division Office in San Mateo, California under management of Rear Admiral Ira Sanders, USC & G (ret.). Headquartered there will be the firm's GDC teams (diving geologists) which have been active in offshore petroleum exploration. The head office of Geonautics, Inc. is at 1346 Connecticut Ave., N.W., Washington 6, D. C.

PROMINENT GEOLOGIST DIES

Professor Alexander N. Winchell, one of a family of distinguished American geologists, died early in June in New Haven, Conn. at the age of 84. He served on the faculty of the Department of Geology at the University of Wisconsin for 37 years, and after his retirement was a visiting professor in mineralogy at the University of Virginia and Columbia University. After moving to Connecticut he was made Honorary Fellow in Geology at Yale and served several years as a consultant to American Cyanamid's Stamford Laboratory. Most notable among his many scientific publications was *Elements* of Optical Mineralogy, the classic reference book which was published first in collaboration with his father, N. H. Winchell. The latest edition was done in association with Horace Winchell, his son.

As a fellow of the GSA and MSA and a member of SEC, AIME, AAAS and other learned societies, he held many important posts and was Roebling Medalist of the MSA in 1955. Students, colleagues and friends benefitted from his remarkable qualities as a teacher, a research worker, and a person.

Two daughters, Mrs. Robert E. Rettger and Mrs. R. J. Lund, are married to

TRAVEL REGULATIONS EASED

President Eisenhower recently signed into law the Government Employees Training Act (P. L. 85-507) which contains under its general provisions (sec. 19) authorization for government employees to accept payment of travel, subsistence, and other expenses incident to participation in affairs of tax-exempt organizations. This legislation is important to scientific organizations and to government scientists alike. Specifically, to geologists in government service it means that they can accept reimbursement for travel from the GSA and other tax-free societies without going on annual leave for participation in council and committee meetings, lecture tours, and other society functions.

The enactment of these regulations has been hailed as a long-needed action on the part of the federal government to improve its relationship with the scientific community. The broad provisions of the basic legislation, the Government Employees Training Act, is to provide improved efficiency and economy in government through training programs for government employees.



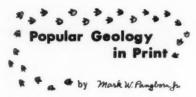
Alexander N. Winchell

geologists who with Dr. Horace Winchell carry on the long-standing identification of the name Winchell with the geological profession in America.

A Geologist Ambassador

Reprinted from the Newsletter of the Geological Society of New Zealand, No. 5, April 1958

Professor R. P. Goldthwait, with Mrs. Goldthwait and their four children, left New Zealand at the beginning of February 1958 to return to Ohio after spending about eleven months here as a Fulbright Research Scholar and a consultant on Glaciology. While in this part of the world he and his family saw as much of Australia as the average Australian, more of New Zealand than our average countryman, as well as sandwiching in a month in the Antarctic that included a flight over the South Pole. All this was accomplished in addition to his own research work in the Tasman Valley and on the Morainic deposits of the Franz Josef Glacier, and in spite of an exceedingly generous number of talks to various organizations including school parent-teacher and church groups, and a persistent heavy rain that seemed to follow him about. A more respected and popular group of ambassadors for the American people it would be hard to imagine. Address: Geology Department, Orton Hall, Ohio State University, Columbus 10, Ohio, U. S. A.



"The most remarkable man of our time," said Henry Adams of the all-but-forgotten geologist who is the subject of Thurman Wilkins' CLARENCE KING, A BIOGRAPHY (Macmillan, 1958, \$7.50). Wilkins tends to gloss over his hero's flawed character, which brought him eventually to a miserable, money-grubbing end, and this may explain why King, whose charm and brilliance made him the valued friend of Adams, John Hay, and many another leading personality of his time, fails to come completely alive in this eminently readable book. However, the background of latter nineteenth century America, both raw West and cultured East, is deftly sketched, and Wilkins describes King's mine investigations and his surveys in the Sierra Nevada and across the Great Basin in words that the layman will enjoy. The author, a professor of English at Columbia, has provided an exhaustive bibliography for a volume that belongs in every scientific library.

King's immense reputation was in part founded on his exposure of a salting scheme which bamboozled engineer Henry Janin, Tiffany experts, and William Ralston. Asbury Harpending, prospector and mining stock promoter, relates his part in this celebrated event in an utterly delightful brief autobiography, The Great Diamond Hoax and Other Stirring Incidents...
(U. of Oklahoma Press, 1958, \$2), which originally appeared in a limited edition in 1915.

We are glad to see that Dirk Jan Struik's "Yankee Science in New England" has been reprinted, without change, this time under the title Origins of American Science (New England), (Cameron Associates, 1958, \$6); "New England" is broadly interpreted, and in this volume much of American geology before 1860 is excellently summarized.

In Man, Metals, and Modern Magic (American Society for Metals, 7301 Euclid Ave., Cleveland, 1958, \$2.95), J. Gordon Parr authoritatively traces the history of metallurgy from primitive man to the present, for ages 15 up; better text and fewer illustrations than in the Society's similar The Story of Metals, by J. W. W. Sullivan, 1951.

Vening Meinesz

Distinguished Lecturer at Michigan State Univ.

Professor F. A. Vening Meinesz of the University of Utrecht, Holland, is to be a Distinguished Visiting Lecturer on the campus of Michigan State University during the Fall quarter. He will offer a course in Problems in Geophysics under auspices of the Department of Geology.

Professor Vening Meinesz needs no introduction to geoscientists of this country, for among the many honors bestowed on him for his outstanding scientific achievements in the field of geophysics have been the Penrose Medal (1945) of the Geological Society of America, the Bowie Medal (1948) of the American Geophysical Union and the Agassiz Medal (1948) of the Naional Academy of Sciences. He was honored in May 1957 by the Royal Netherlands Geological and Mining Society on the occasion of his seventieth birthday (Geotimes, Sept., 1957).

INSURANCE -- Continued from page 5

coverage by purchasing higher cost "trip insurance."

A MINERAL RESEARCH INSTITUTE is another form of exploration insurance available to industry. The Boyd Committee (GeoTimes, May, 1958, p. 5) reported to the National Science Foundation that there was a need for a mineral research institute to attack basic research on problems relating to mineral resources. The mining industry, for various reasons, was cool to the purchase of this kind of long-term annuity when it was presented to it in 1956.

The actuaries calculate an increasing scale of premiums for life insurance due to the increasing risk that comes with advancing age. Similarly, the premiums for an adequate exploration program will advance the longer the adoption of an adequate resource insurance plan is delayed.

You saw it in Geo Times . . .

Industrial Pocket Microscope, fountain pen sized, offers 20X, 40X, and 60X adjustable power. Focused by adjusting milled ring. Chrome tip brings objects into focus. Available from Edmund Scientific Co., Barrington, N. J.



DEAR SIRS:

On behalf of the International Oceanographic Congress, I want to thank you for printing our notice for the Congress (GeoTimes June 1958). I can assure you that we have had every indication that it was effective from the great number of inquiries from geologists.

Sincerely yours,

MARY SEARS, Chairman International Oceanographic Congress

Boys LIFE

Your theme "Have Rocks—will travel" is working like a charm at our house. Rocks—pardon me—minerals—have come and gone steadily now for several weeks. If anything gets the Post Office Department out of the "red" this surely will.

Seriously though, it was a grand idea, and my son is building up a very interesting collection. Hope some lads just beginning will benefit as well.

Sincerely,

Bob Cornell's Mom Marion, Ind.

EDITOR: This is a product of geology Month in Scouting.

DEAR EDITOR:

Howard Meyerhoff's statement on Manpower in the April issue, specifically, that there may be a current over-supply of geologists, illustrates so nicely the mental grain which has led our profession down an often unimpressive scientific trail. The manpower requirements for geologists are to be judged not by vacancies to be filled but by the degree to which our society will gain by the proper use of geologic knowledge and sharp vision. Vacancies in positions are merely mechanical openings to be filled. They are not a measure of the need for keen men in a dynamic society. Accumulated knowledge and our ever enlarging knowledge can only be used to advantage by injection into the economic life stream. The injection must be done by competent geologists equipped with hypodermic needles.

Geology is both a profession and a business. It is similar to law in that a law training permits a lawyer to act not only as a consultant on current problems of law, but as a catalyst to commerce. Geology, to me, is infinitely dynamic and truly catalytic. We need not fewer geologists but fewer knowledge-laden men who think of geology as something to be taught, learned and rarely practiced in this exciting world. Graduate schools should stimulate the vision of young men through exposure to stimulated men. The schools must not stifle the profession by burying young men in ivy from which many never emerge with a recognizable pulse. Vacancies are not holes of a given number in a cliff designed by nature for geologists to crawl into. Vacancies are created by men, and, within reason, their optimum number is what we make it.

There is something inconsistent between the bright editorial philosophy of Geo-Times and the image-of-our-forefathers philosophy of Manpower.

Very truly yours,

JOHN W. FOSTER Los Angeles, California

DEAR EDITOR:

In answer to John W. Foster's letter to GeoTimes, may I agree that "the manpower requirements for geologists are to be judged not by vacancies to be filled but by the degree to which our society will gain by the proper use of geologic knowledge..." This is a long-range point of view with which I hope I dealt adequately in the "Report of the Advisory Committee on Minerals Research," issued by the National Science Foundation in 1956, and for which I wrote the nine introductory pages.

Vacancies may, as Mr. Foster says, merely be mechanical openings to be filled, but how does he handle the problem when there are more men available than there are vacancies? The philosophic view that geology is infinitely dynamic and truly catalytic, but economics can be catastrophic. Under present conditions many oil companies have either frozen their programs of exploration and development, and some have actually retrenched. Mining companies have gone further, even to the extreme of dumping their exploration personnel.

Having hired several of these young geologists fresh from college and graduate

school within the past three years, I am not aware that the schools are stifling the profession by burying young men in ivy. It sounds to me as if it is Mr. Foster who has his head in the clouds, whereas at this minute we need our feet on the ground and need to keep our eyes there, too. There was no philosophy in the manpower column that appeared in the April issue of GeoTimes. It was just a realistic look at some cold-blooded facts that we are facing at the present time and of which Mr. Foster seems unaware.

Truly yours,

HOWARD A. MEYERHOFF Executive Director Scientific Manpower Commission

DEAR EDITOR:

In the March issue of your inspiring Geo-Times you have reported on the project of the AGI to establish an International Abstracts Survey. In this article it is mentioned that there exists a Russian abstract journal publishing annually more than 12,000 abstracts on geological literature of the world. Furthermore you state "in Germany Neues Jahrbuch publishes some abstracts."

This phrase apparently does little justice to the Neues Jahrbuch, or more correctly, to the Zentralblatt fur Mineralogie and the Zentralblatt fur Geologie und Palaontologie connected with the Neues Jahrbuch and published by E. Schweizerbart in Stuttgart. These journals have brought out altogether 8,156 abstracts and titles in 1956 and 8,977 in 1957. To name that "some abstracts" seems to be somewhat underrated. It might be added that the Neues Jahrbuch together with its later descendant, the Zentralblatt, is by far the oldest abstracting journal in the field of earth sciences. It was founded in 1807 and one of its earliest contributors was no less a person than Johann Wolfgang Goethe.

Sincerely yours,

OTTO H. SCHINDEWOLF University of Tubingen Germany

DEAR EDITOR:

I am inspired by Prof. Maxwell's "Better Geologists For Industry?" So inspired, in fact, that I am ready to come out swinging a left-handed monkey-wrench.

Prof. Maxwell seems to imply that one with less than a Ph.D. is at a "low educational level." This is a rather dubious compliment to thousands of graduates with "only" Bachelor's degrees. "First degree

level of education" might provoke fewer dark thoughts.

A first purpose in education is to develop mental integrity so that a person becomes able to separate fact from fiction in his own and others' thinking. His college course gives him the means for specialized thinking. Ph.D.'s have more tools to use but not always more ability to think.

Experience is often of most value to industry. Doctors and Bachelors must acquire virtually the same amount of experience before becoming real assets to a company. Chance will never be completely removed from exploration, and a high value is placed on experience in minimizing chance in making oil and mineral discoveries. The practical application of geology requires experience, and a greater number of Ph.D.'s alone cannot change this.

The type of person attracted to geology, chemistry, and physics varies considerably, and here lies a big reason why there are proportionately fewer Ph.D.'s in geology. The chemistry or physics graduate must necessarily be strongly scientifically-minded in order to have absorbed the higher mathematics and exact science studies of his pre-graduate work. This type of mind more frequently aspires to a Ph.D. level of learning. The inexactness of geology is appealing to an abstract type of mind that often has little inclination toward the exact sciences of chemistry and physics.

In chemistry and physics natural laws insist that 2 plus 2 equals 4; but in geology, where laws are frequently unnatural, 2 plus 2 often equals 5 and sometimes 6. This inexactness must certainly have a bearing on the type of mind attracted and consequently on the number of aspirations to higher degrees.

Which is a good thing. Geology would surely decline as a popular science if industry preferred mostly Ph.D.'s, and there would eventually be too many Chiefs and not enough Indians.

I am glad that Prof. Maxwell ends the title of his paper with a question mark. Perhaps there is doubt in his own mind about the certainty of his thoughts.

CHESTER W. SHAW Rosiclare, Illinois

DEAR EDITOR:

I have just received the new May number of GeoTimes and I wish to commend and congratulate you on a very fine issue. It seems to me that this issue for May has reached a higher level of excellence than

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has ever been achieved in most earlier numbers.

I wish especially to commend the fine article "Better Geologists for Industry" by Dr. John C. Maxwell. One reason for writing this letter is to inquire if reprints of this fine article are to be made available, at cost, to persons who might like to give a few to interested persons, especially advanced students? I think that this article would be a fine thing to hand to all of our better graduate students who are at that critical stage of trying to decide if they should go on for a Ph.D. or accept a good job in industry after the master's degree. At least that is what I would like to do for my graduate students at this stage.

Most sincerely yours,

A. L. LUGN University of Nebraska

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No. 1 for 1958 is now being translated and will be published during the summer of 1958

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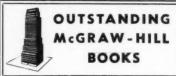
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GETTING ACQUAINTED WITH MINERALS

By George Letchworth English; and David E. Jensen, Director of the Geological Division, Ward's Natural Science Establishment. New Revised Edition. 362 pages, \$6.95

The many new developments in the field of mineral collecting have made necessary a revision to bring this popular work up to date, and make it more useful. As before, it is a complete guide for elementary mineralogy courses as well as for the amateur collector. The section describing minerals has been updated and considerably expanded. Material is included on fluorescent and radioactive minerals, and on the use of X-rays.

INTRODUCTION TO HISTORICAL GEOLOGY

By Raymond C. Moore, University of Kansas. New Second Edition. 656 pages, \$7.95

An updated new edition of an exceptionally readable and well-organized acount of such important features of earth history as evolution of plants and animals as recorded by fossils. The chapter on the pre-cambrian period has been rewritten and expanded. Avoiding technical terminology, the author makes clearly understandable how observed geologic features furnish a record of past conditions and events.

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CLARENCE KING. By Thurman Wilkins, 441 pp. (New York: The Macmillan Co. \$7.50).

In writing this biography of one of the most colorful figures in American geology, the first director of the U. S. Geological Survey, the author has dealt kindly and understandingly with much conflicting material

King was the leader of one of the four great teams which explored, mapped and helped open the West during the years following the end of the War Between the States. At 37 he was a man of independent means, a talented raconteur, an accomplished geologist, one of the West's leading cattle barons, and part owner of several important mining properties-perhaps the most promising young geologist of his time. But after less than two years with the Geological Survey, in which time he rejected the self-denying life of a scientist and chose a business career, his fortunes began to slide, he was faced with many inner conflicts, and he found it necessary to live a double life after his marriage with Ada Todd.

HBN.

Matter, Earth, and Sky: A new text on Physical Science by George Gamow; 561 pp., Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1958. \$9.65.

Since geology is considered essential to an adequate orientation course in PHYSI-CAL SCIENCE, for college freshmen without previous experience in science, the choice of a text should depend on how well this subject, as well as the other sciences covered, is developed. Upon reviewing a number of new texts, under consideration for adoption, it was found that Gamow's MATTER, EARTH, AND SKY was very inadequate with respect to geological coverage.

Because the author presents the geological data more from the viewpoint of a sub-atomic physicist than a student of natural science, his text is replete with theories concerning the nature of the earth's core, its magnetism, etc., to the detriment of explaining surficial structures which the student can really see and appreciate. Such important geological materials as minerals, rocks and economic deposits, are barely touched upon.

The author's knowledge of historical

geology is superficial, especially with respect to stratigraphy and the value of fossils as horizon markers. The lack of appeal of his presentation is excused by such disparaging remarks as "But the reader is probably growing tired of constant repetition of the words "revolution" and "sedimentation"; to cheer him up we can tell him that there will be more color to the picture after one more repetition." That, of course, is a matter of opinion. What other science has the dramatic appeal of geology, if properly presented? Certainly, the caricatures scattered through the text do not imbue it with dignity!

A.R.B.

OIL: FROM PROSPECT TO PIPELINE; Robert R. Wheeler and Maurine Whited; 115 pages, 16 illustrations, Dictionary and Appendix; 1958, Gulf Publishing Co. \$2.95.

Intended as a concise account of oil operations for the laymen and oil company personnel. Covers the technical, economic, legislative, and competitive aspects of finding and producing oil, discussed under the following chapter headings: 1. Oil is How You Find it; 2. Drilling for Oil; 3. Getting the Oil to Market; 4. Who Owns the Oil; 5. What's It Worth; 6. Pride, Participate or Promote; 7. An Oil Dictionary; 8. Ab-

breviations Used in Oil Operations. The text is appended with useful tabulations including geologic nomenclature charts for the oil producing provinces of North America.

This book should be especially helpful to the rather departmentalized professional and clerical staff of the oil companies. Countless mineral owners and investors, as well as students considering a career in the oil business, should find the book useful.

P.B

OIL RESERVOIR ENGINEERING, Second Edition by Sylvain J. Pirson, 735 pp., 1958, McGraw-Hill, 330 West 42nd Street, New York 36, New York, \$14.00.

This volume presents the fundamental principles by which oil is recovered from natural reservoirs. In addition to being well suited as a college textbook, the practicing petroleum engineer will find it a most valuable reference.

The tremendous recent advances in the understanding of oil recovery processes have required extensive revision of the original edition. New chapters have been added and this edition contains twice as many illustrations as the first. About 50 illustrative problems with detailed solutions aid the often difficult transition of



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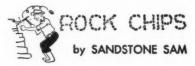
theoretical principles to practical application. The book is particularly recommended for petroleum engineers and geologists who have not had recent formal training in the rapidly progressing field of reservoir engineering.

P.B.

Montana Oil & Gas Fields Symposium, prepared by the Billings Geological Society, 249 pages, 1958, Order from Petroleum Information, 111 North 30th St., Billings, Montana. \$15.00.

A volume that contains sixty papers relating to Montana's oil and gas fields.

LIST OF PUBLICATIONS AND MAPS, 1958, Virginia Division of Mineral Resources, Dept. of Conservation and Development, Charlottesville, Virginia. Free on request.



Comparative Anatomy: Animals are living in places in which their organs are poorly adapted to. They evolve from other organisms which-not with-different environmental circumstances.

Susan B. Anticline, foremost lady geologist, recently lectured to the geology students of an ivy-covered eastern girls' college. Her topic was "Some typical bulges in the ac girdle."

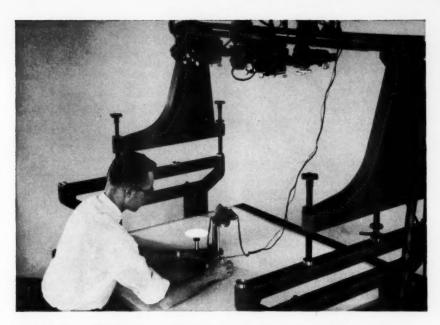
Question raised by the sneaky geology prof: what's the difference between an ammonite and a Mennonite?

Is the beginning of an earthquake the onset of the offset, or the outset of the upset?

Prof: What is a mastodon? Student: A bald-headed mountain with no timberline during part of the year.

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BOX 398. WHO NEEDS A 29 year old, married exploration geologist with varied mineral deposit experience who can write? Has written articles and reports for all levels of geological interest and knowledge. Open to any attractive offer.

BOX 464. GEOLOGIST, 23, married, B.S. in June, 1958. Interested in all phases of Geology. Desires position either in or outside U.S. wh.re hard work leads to advancement. Resume on request.

BOX 481. RESEARCH PETROLEUM GEOLO-GIST-STRATIGRAPHER, 30, M.S. Extensive experience in most provinces U.S. and Canada. Have utilized newer exploration tools; Entropy Lithofacies mapping, Gamma-Halo surveys, porosity maps, moment maps, etc. Desire position of responsibility in research or exploration. Executive ability.

BOX 483. PETROLEUM-GEOLOGIST, M.S. 30. Diversified experience; subsurface, research, teaching. Knowledge of Texas, midcont., Rocky Mts., Appalachian, Canada. Creative thinker, aggressive, proven oil finder, capable of organizing or operating exploration or research group. Desire domestic or foreign position of responsibility.

BOX 487. GEOLOGIST, GEOPHYSICIST, B.S., 28, family. Desire permanent position as geologist or staff geophysicist. Background: one year in geology, three years in geophysics, and eight summers of oil field work during school years. Presently employed.

BOX 494. GEOLOGIST, Ph.D., specialist in Economic Geology, Petrography, Mineralogy, Tectonics, Mineralography and Microchemistry; widely travelled, familiar with geologic litera-

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ture, and with long experience in teaching earth sciences. Seeks position with a good uni-versity or a serious small college. Will also consider research or exploration work. Excellent references and available after July 1, 1958.

BOX 498. GEOLOGIST, Ph.D., 34, married, de-sires permanent teaching career. Background in sedimentation, sedimentary mineralogy and geochemistry, petroleum geology, principles of stratigraphy. Presently employed as research geologist by major oil company. Two years' teaching experience in small university.

BOX 500. GEOLOGIST, M.S., married, 3 years subsurface experience in Montana and No. Dakota, some photogeology. Interested as pe-

troleum geologist or instructor.

BOX 501. GEOPHYSICIST-GEOLOGIST, 29, extensive experience in Gulf Coast, B.S. Geology, 5 years seismic experience, 1 year coordinating, will relocate. Desires job as district geophysicist or similar position.

BOX 502. GEOLOGIST, experienced explora-tionist with diversified background needs more

responsible position.

BOX 504. GEOLOGIST, 43, Ph.D., family, do-mestic and foreign training. Broad experience in all fields of Geology and university teaching. Speaks and writes several foreign languages. Desires teaching position in college or univer-sity. Available September 1958.

BOX 505. ENGINEERING GEOLOGIST, BA. 26, married, family. 3 years' experience flood control & military projects; planning, surveys, subsurface investigation, supervision, materials, ground water, report writing, legal, estimates. Available in Fall, U.S. or overseas. Position with responsibility preferred.

sition with responsibility preferred.

BOX 509. ENGINEERING GEOLOGIST, Ph.D.,

40. Broad experience General and Engineering
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active research. Seeks teaching position university or engineering college, esp. to offer versity or engineering college, courses engineering geology field.

BOX 510. WOMAN GEOLOGIST seeks office geology or library research. 12 years experience in U.S., Newfoundland and Africa includes prospecting in field and general assistance at corporation head offices. Free to travel.

BOX 511. GEOLOGIST B.S., 28, recent graduate, avg. grades, family, A.F. veteran, well rounded background. Desires position as geologist or scout. 4 years drafting experience.

BOX 512. ECONOMIC GEOLOGIST, A.B., 30, married. Desires position leading toward responsible supervisory or administrative duties in western U.S. or with U.S. foreign-operating company. Seven years varied experience including supervisory duties in Brazil, Jamaica, Panama, and western U.S.; mineral deposit exams, geological survey, mining, core drilling, topo surveys, Amazon jungle trips. Working knowledge Spanish, Portuguese, some German. Will travel. Good references.

BOX 513. GEOLOGIST, M.S., considerable ex-perience in petroleum geology. Formerly major company division geologist. Have executive and administrative ability. Desires foreign contract. Now consultant.

BOX 514. GEOLOGICAL ENGINEER, 32, M.S. Caltech, wants challenging position in petro-leum industry. Eight years varied domestic engineering experience with major company in development operations, property evalua-tions, subsurface studies.

BOX 515. GEOLOGIST, Ph.D., 8 years experience in stratigraphy, structural geology, paleontology, regional geology, subsurface, well sitting, executive work, Rocky Mts., Midwest, Africa, with major and independent oil companies, seeks challenging position, domestic panies, seeks challenging position, domestic or foreign. Capable of organizing exploration group, setting up micropaleontological-strati-graphical laboratory. Speak, read and write fluent French, German. Available immediate-ly. Presently in Europe. Excellent references.

OX 516. PETROLOGIST, ECONOMIC GEOL-OGIST, MINERALOGIST, 37. Ph.D. from leading Eastern University, 8 years post-Ph.D. experience in teaching, research and explora-tion, with research publications, is interested in academic position. Fields of interest include all phases of petrography and petrology, ore deposits and uranium, petroleum and indus-trial minerals, sedimentation, geo-chemistry, elementary mineralogy and crystallography. elementary mineralogy and crystallography.

BOX 517. PETROLEUM GEOLOGIST, M.S., family, desires to relocate in Alaska. Diversi-fied Arctic, Mid-continent, and Rocky Moun-tain experience. Currently employed by major oil company. Specialties include photogeology, surface and subsurface structure, stratigraphy. Creative thinker with leadership and administrative ability. Excellent references.

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BOX 519. GEOLOGIST, 26, single, B.S. in Geol. Eng. from Texas A&M. 3 years major com-pany experience as subsurface geologist in Gulf Coast area. Desires position with ag-gressive major or independent oil co., domestic or foreign.

BOX 520. GEOPHYSICIST. B.S. in geology, 10 years seismic experience including 4 years party chief and 2 years review work. Presently employed. Wants responsibile job requiring both administrative and technical ability. Will go anywhere. Rocky Mountain area preferred.

BOX 521. GEOLOGICAL ENGINEER, 30, six years experience as petroleum geologist, northern Rocky Mountain area and western Washington—surface, subsurface, well-site, administrative and consulting work; available immediately, northern Rocky Mountain area or foreign country. or foreign country.

BOX 522. GEOLOGIST, B.S., minor in engineering, 24, married, good academic record, desire exploration position in Western U.S. or foreign. Oil field and U.S.G.S. ground water experience. Literate in Spanish; complete service as Marine Officer Feb. 1959.

POSITIONS WANTED-Continued

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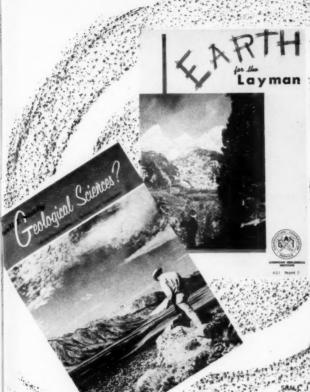
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